

**CLAIMS**

**What is claimed is:**

- 1     1.     A computer-based method of synchronizing a realization of a media stream  
2     having a first representation synchronized with said realization, and at least one second  
3     representation, said method comprising:  
4         determining structure information for said first representation and said at least  
5     one second representation;  
6         determining structure association information between said first representation  
7     and said at least one second representation; and  
8         synchronizing said at least one second representation with said first  
9     synchronized representation and said realization using said structure association  
10    information.
- 1     2.     The method according to claim 1, said step of determining structure information  
2     further comprising:  
3         analyzing said structure information of said first and said at least one second  
4     representation, and providing a stream of tree locators.
- 1     3.     The method according to claim 2, further comprising:  
2         aligning said determined structure information of said first representation and  
3     said at least one second representation.
- 1     4.     The method according to claim 3, wherein said realization comprises at least one  
2     version of content, said method further comprising:  
3         aligning said at least one version of content with said first representation to  
4     produce a web of relations between said at least one version of content and said first  
5     representation.

1 5. The method according to claim 4, wherein said aligning said at least one version  
2 of content with said first representation produces a web of relations between a structural  
3 view of said at least one version of content and said first representation.

1 6. The method according to claim 3, further comprising:  
2 aligning an audio stream specified by said media stream with an audio structure  
3 corresponding to said audio stream.

1 7. The method according to claim 3, further comprising:  
2 aligning a text stream specified by said media stream with a text structure  
3 corresponding to said text stream.

1 8. A system for synchronizing a realization of a media stream having a first  
2 representation synchronized with said realization, and at least one second  
3 representation, said system comprising:  
4 a first structurer configured to determine structure information for said first  
5 representation;  
6 at least a second structurer configured to determine structure information for said  
7 at least one second representation; and  
8 a first aligner configured to align said structure information for said first  
9 representation and said at least one second representation.

1 9. The system according to claim 8, further comprising:  
2 at least one renderer configured to render said at least one second  
3 representation, after being synchronized, in a form suitable for displaying as an  
4 overlaid subtitle.

1 10. The system according to claim 9, wherein said realization specifies a media  
2 stream, said system further comprising:

3 a tree aligner configured to determine a tree structure for said media stream.

1 11. The system according to claim 10, further comprising:  
2 means for detecting speech and non-speech boundaries.

1 12. The system according to claim 10, further comprising:  
2 means for detecting transitions and speaker changes.

1 13. A machine-readable storage, having stored thereon a computer program having  
2 a plurality of code sections executable by a machine for causing the machine to perform  
3 the steps of:

4 determining structure information for a first representation being synchronized to  
5 a corresponding media stream and at least one second representation;

6 determining structure association information between said first representation  
7 and said at least one second representation; and

8 synchronizing said at least one second representation with said first  
9 synchronized representation and said realization using said structure association  
10 information.

1 14. The machine-readable storage according to claim 13, said step of determining  
2 structure information further comprising:

3 analyzing said structure information of said first and said at least one second  
4 representation, and providing a stream of tree locators.

1 15. The machine-readable storage according to claim 14, further comprising:  
2 aligning said determined structure information of said first representation and  
3 said at least one second representation.

1 16. The machine-readable storage according to claim 15, wherein said realization  
2 comprises at least one version of content, said machine-readable storage further  
3 comprising:

4 aligning said at least one version of content with said first representation to  
5 produce a web of relations between said at least one version of content and said first  
6 representation.

1 17. The machine-readable storage according to claim 15, wherein said aligning said  
2 at least one version of content with said first representation produces a web of relations  
3 between a structural view of said at least one version of content and said first  
4 representation.

1 18. The machine-readable storage according to claim 15, further comprising:  
2 aligning an audio stream specified by said media stream with an audio structure  
3 corresponding to said audio stream.

1 19. The machine-readable storage according to claim 15, further comprising:  
2 aligning a text stream specified by said media stream with a text structure  
3 corresponding to said text stream.